REMARKS

The Office Action dated July 22, 2009, and the references cited therein, have been considered. Claims 1-26 were previously pending. Claims 16-23 have been withdrawn from consideration. Claims 24-26 have been canceled. New dependent claims 27-28 have been added. No claims currently stand allowed. Applicants traverse each of the previous rejections for the reasons set forth herein.

Applicants have amended the claims to address the Section 112, paragraph 2 rejections of claims 5-8 as being indefinite for failing to particularly point out and distinctly claim the invention. Clarifying amendments have also been entered in claims 1-3, 5-7, 14 and 15.

Applicants request favorable reconsideration of the previous grounds for the rejection of the previously pending claims, in view of Applicants' amendments and accompanying remarks. Please charge any fee deficiencies to Deposit Account No. 12-1216.

Summary of Rejections

1. Claim 10 was rejected under 25 U.S.C. Section 112, paragraph 1 as failing the meet the written description requirement.

2. Claims 5-8 were rejected under 35 U.S.C. Section 112, Paragraph 2 as being indefinite for failing to particularly point out the invention.

3. Claims 1-2, 7 and 11-15 were rejected as anticipated under 35 U.S.C. Section 102(e) over Mueller US Pat. No. 7,068,687 (Mueller).

4. Claims 3-4 and 8 were rejected as obvious under 35 U.S.C. Section 103(a) over Mueller in view of Ferguson US App. Pub. No. 2002/0041604.

5. Claims 5 and 9 were rejected as obvious under 35 U.S.C. Section 103(a) over Mueller in view of Roberts US Pat. No. 6,959,019 (Roberts).

6. Claim 6 was rejected as obvious under 35 U.S.C. Section 103(a) over Mueller in view of Roberts and Okumura US App. Pub. No. 2006/0007950 (Okumura).

7. Claim 10 was rejected as obvious under 35 U.S.C. Section 103(a) over Mueller in view of Kubo US Pat. No. 7,440,475 (Kubo).

Applicants traverse each of the above-summarized current grounds for rejection set forth in the Office Action.

Applicants' Remarks Addressing the Specific Grounds for the Rejections

1. Rejection of Claim 10 as Failing to Meet the Written Description Requirement

Applicants traverse the rejection of claim 10 as failing to meet the written description requirement. Applicants note that claim 10 is supported by the embodiment depicted in FIG. 5 (first sub-network with end notes E1, E2 and E3) and its associated written description. Applicants furthermore note that the claim itself is considered part of the specification and is used to measure compliance with the written description requirement. The Office Action does not exhibit any difficulty in understanding the elements recited in claim 10 and thus the "written description" requirement is likely met by the claim itself and is further bolstered by the embodiment depicted in FIG. 5 and the corresponding written description.

2. Rejection of Claims 5-8 as being indefinite

Applicants have amended the claims to address the indefiniteness issues raised in Sections 6-9 of the Office Action. Claim 5 has been amended to address the clarity rejection. Claim 6 is amended to remove the recited "regular connection". Claim 7 has been amended to remove the specific example (now recited in new dependent claim 28).

In the process of clarifying the aforementioned claims, Applicants noticed several potential clarity issues in both claim 1 and claim 2. Claim 1 has been amended to recite "wherein the inverse multiplex data signals *from a same one of the plurality of inverse multiplexers*" to emphasize that function of the inverse multiplexers which divide a single input data stream into a plurality of output data streams. Each of the plurality of output data streams is transmitted to a different one of the plurality of intersubnetwork connections (e.g., 301, 302, and 303) supported by a corresponding one of the set of system multiplexers (112) in FIG. 4. Similar amendments have been carried out on claim 2.

3. Rejection of Claims 1-2, 7 and 11-15 as anticipated by Mueller

Applicants traverse the Office Action's anticipation rejection of independent **claims 1 and 2**. Claim 1 is directed to a physical network for *producing*, from a single (original) data signal, an inverse multiplexed signal transmitted over a plurality of physically separate intersubnetwork connections. Claim 2 is directed to a physical network for *receiving* and combining a set of inverse multiplexed signals to render a single (original) data signal. Applicants have amended independent claims 1 and 2 to explicitly recite that the "intersubnetwork connections" are ***physically separate*** connections. Moreover, Applicants have emphasized that the system (de)mux is interposed *between* an intersubnetwork connection and an inverse (de)mux. The clarified claims 1 and 2 (closely following the exemplary embodiment depicted in FIG. 4) contain a number of recited elements that are not disclosed in Mueller.

Summary of Applicants' Disclosed/Claimed Invention

Applicants, to ensure proper understanding of the claim terms, specifically direct attention to Applicants' definitions of the terms: multiplexer, demultiplexer, inverse multiplexer and inverse demultiplexer at page 2 of the original application. In particular, Applicants note that an inverse multiplexer takes a single (original) flow of data signals and converts the single flow into multiple output flows. The multiple output flows must be re-combined (at the receiving side) by an inverse demultiplexer to render the single (original) flow of data signals.

Applicants' claimed invention is directed a set of data signal processing and routing components that, in a particular practical application, use local physical loop telephone lines from a set (plurality) of distinct homes to provide a set of temporary parallel physical intersubnetwork connections that support, on a temporary basis, broader bandwidth between: (1) providers on the telephone network side, and (2) particular homes including one or more individual end nodes. The enhanced bandwidth is achieved, on a temporary basis, by inverse multiplexing a single data signal, from the telephone network side, into multiple separate data signals (by an inverse mux – 221 in FIG. 4), transmitting the separate signals over the network in parallel via the physically separate intersubnetwork connections (connections 301, 302 and 303 in FIG. 4), and then re-combining the separate signals back to the single data signal (by an

inverse de-mux – 121 in FIG. 4) on the home network/endpoint side. **In accordance with the presently claimed invention, *multiple inverse mux's* (221) are each connected to *multiple system mux's* (212), and each of the system (de)mux's are coupled to a distinct intersubnetwork connection (301, 302, and 303).** *See, particularly,* Applicants' claims 1 and 2 closing sequences of "wherein" clauses.

In practical application, each one of a set of homes is equipped with a system de(mux)/inverse de(mux) arranged in a "router" package. The claimed arrangement facilitates: first, receiving a *separated* single data signal (at an aggregate high data rate) via a set of physically separate lines (into the set of homes), and second re-assembling the separated single data signal using a designated (intended endpoint) inverse demux on the home side of the set of intersubnetwork connections. The claimed sharing of parallel intersubnetwork connections by a plurality of interconnected inverse multiplexers coupled to system multiplexers (each associated with a separate physical intersubnetwork connection) is neither disclosed nor suggested by Mueller.

Summary of Mueller's Disclosure

Mueller, upon which the Office Action primarily relies, neither discloses nor suggests Applicants' claimed arrangement of inverse (de)multiplexers, system (de)multiplexers, and physically separate intersubnetwork connection. Mueller discloses a *single* demultiplexer (inverse mux) that separates a data signal into a set of pulse frames. The pulse frames are thereafter transmitted via a chain of repeaters to a *single* multiplexer (inverse demultiplexer) on the receiving end.

Mueller also discloses chained sets of optical repeaters that receive and regenerate the data signal transmitted via a single network connection between the single demultiplexer and single multiplexer. However, none of these repeater stages bears any relationship to the claimed invention. If anything the repeaters are sub-elements within a single physical intersubnetwork connection.

Mueller thus discloses a conventional *single* multiplexer/demultiplexer arrangement.

Mueller Does Not Anticipate Any of the Pending Claims

In contrast to the physical network recited in Applicants' claims 1 and 2, nowhere is there even a hint in Mueller of a *plurality* of system de(mux) elements connected to respective physical intersubnetwork connections. Thus, there isn't even the slightest possibility that Mueller discloses/suggests Applicants' claimed arrangement of: (1) a *plurality* of inverse de(mux), (2) a *plurality* of system de(mux) elements, and (3) where the outputs/inputs of the plurality of inverse de(mux) elements are connected to each of the plurality of system de(mux) elements (i.e., cross-connections between system de(mux) and inverse de(mux) elements) – the system de(mux) elements being connected to a physically separate intersubnetwork connection. *See, in particular,* Applicants' claims 1 and 2 closing "wherein" clause sequences reciting particular details of the cross-connections between system de(mux) and inverse de(mux) elements.

Mueller discloses only a *single* physical connection between a demux/mux element pair. The connection in Mueller between single demux/mux pair corresponds to Applicants' claimed intersubnetwork connection. The *single* intersubnetwork connection disclosed in Mueller is contrary to the explicitly recited *plurality of separate physical connections*. More importantly, the single physical connection precludes Mueller's disclosure of Applicants' claim elements defining a "cross-connection" arrangement between system de(mux) and inverse de(mux) elements within a subnetwork. **In the event the rejections of independent claims 1 and 2 are not withdrawn, Applicants request identification of the *plurality of connections between each of the plurality inverse de(mux) with the plurality system de(mux) elements*. Mueller unequivocally discloses only a *single* optical transmission line connecting a single mux/demux pair.**

The absence of any disclosure in Mueller with regard to Applicants' claimed plurality of inverse mux/demux elements and plurality of system mux/demux elements (connected to respective intersubnetwork connections) precludes a finding that Mueller discloses Applicants' claimed cross-connections between such elements in the clarified claims 1 and 2. Applicants' thus request reconsideration of the previous rejection of independent claims 1 and 2 and each of the presently pending dependent claims.

Applicants traverse the rejection of each of the presently pending dependent claims based upon the reasons set forth herein above regarding independent claims 1 and 2 from which each depends. Applicants address certain grounds for the rejection of the dependent claims herein below.

4. Rejection of Claims 3-4 and 8 as obvious over Mueller in view of Ferguson

Applicants traverse the rejection of claims 3 and 4 since Ferguson, like Mueller, discloses a *single* inverse multiplexing and demultiplexing pair. As noted previously above, the claimed invention requires a *plurality of both elements as well as connections between each one of the inverse de(mux) elements to each of the plurality of system de(mux) elements.* Applicants do however agree that the prior art discloses using telephone wires for carrying out multiplexed communications.

5. Rejection of Claims 5 and 9 as obvious over Mueller in view of Roberts

Applicants specifically traverse the rejection of claim 5 since Mueller discloses multiplexing signals over a single physical connection (an optic fiber). Roberts does not suggest sharing a plurality of intersubnetwork connections for transmitting/receiving signals for a plurality of inverse de(mux) elements – nor does the Office Action appear to assert such a teaching exists in either Mueller or Roberts.

Moreover, claim 5 recites a routing unit connected to at least one other node (besides its "respective node") via another routing unit. The recited "intra" subnetwork routing described, for example with reference to Applicants' FIG. 5, is not disclosed or suggested by either Mueller or Roberts.

6. Rejection of Claim 6 as obvious over Mueller in view of Roberts and Okumura

Applicants traverse the rejection of dependent claim 6 for at least the reasons set forth above regarding claim 1 from which claim 6 depends.

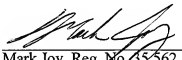
7. Rejection of Claim 10 as obvious over Mueller in view of Kubo

Applicants traverse the rejection of dependent claim 10 for at least the reasons set forth above regarding claim 1 from which claim 10 depends.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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